Map Unit Description (MN)

Sherburne County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

7A--Hubbard loamy sand, 0 to 2 percent slopes

Hubbard

Extent: 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 20 in	loamy sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw -- 20 to 32 in	loamy sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C -- 32 to 80 in	sand	rapid	1.44 to 3.36 in	5.6 to 7.8

7B--Hubbard loamy sand, 2 to 6 percent slopes

Hubbard

Extent: 95 percent of the unit
Landform(s): hills on outwash plains, hills on stream terraces
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loamy sand	rapid	1.45 to 2.17 in	5.1 to 7.3
Bw -- 18 to 23 in	loamy sand	rapid	0.14 to 0.33 in	5.1 to 7.3
BC,C -- 23 to 80 in	sand	rapid	1.71 to 4.00 in	5.6 to 7.8

7C--Hubbard loamy sand, 6 to 12 percent slopes

Hubbard

Extent: 95 percent of the unit
Landform(s): hills on outwash plains, hills on stream terraces
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 12 in	loamy sand	rapid	0.94 to 1.42 in	5.1 to 7.3
Bw -- 12 to 33 in	coarse sand	rapid	0.64 to 1.49 in	5.1 to 7.3
C -- 33 to 80 in	coarse sand	rapid	1.41 to 3.28 in	5.6 to 7.8

32B--Nebish fine sandy loam, 2 to 6 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
Bt -- 5 to 43 in	clay loam	moderate	5.67 to 7.18 in	5.6 to 7.8
C -- 43 to 80 in	loam	moderate	4.07 to 7.03 in	7.4 to 8.4

32C--Nebish fine sandy loam, 6 to 12 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sandy loam	moderately rapid	0.92 to 1.28 in	5.6 to 7.3
BE -- 7 to 11 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 11 to 44 in	clay loam	moderate	4.96 to 6.28 in	5.6 to 7.8
C -- 44 to 80 in	loam	moderate	3.94 to 6.81 in	7.4 to 8.4

32D--Nebish fine sandy loam, 12 to 18 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 18 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
Bt -- 3 to 22 in	clay loam	moderate	2.83 to 3.59 in	5.6 to 7.8
C -- 22 to 80 in	loam	moderate	6.37 to 11.00 in	7.4 to 8.4

32E--Nebish fine sandy loam, 18 to 35 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hills on moraines
Slope gradient: 18 to 35 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.51 to 0.71 in	5.6 to 7.3
E -- 4 to 13 in	fine sandy loam	moderately rapid	1.00 to 1.72 in	5.6 to 7.3
Bt -- 13 to 36 in	clay loam	moderate	3.43 to 4.34 in	5.6 to 7.8
C -- 36 to 80 in	loam	moderate	4.85 to 8.38 in	7.4 to 8.4

38B--Waukon fine sandy loam, 2 to 6 percent slopes

Waukon

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
E -- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
BE,Bt -- 12 to 43 in	loam	moderate	4.67 to 5.91 in	6.1 to 8.4
Bk -- 43 to 80 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

75--Bluffton loam, depressional, 0 to 1 percent slopes

Bluffton, depressional

Extent: 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 -- 0 to 13 in	loam	moderate	2.60 to 3.12 in	5.6 to 7.3
Bg -- 13 to 40 in	loam	moderate	4.07 to 4.62 in	5.6 to 7.3
Cg -- 40 to 80 in	loam	moderately slow	5.96 to 7.56 in	7.4 to 8.4

125--Beltrami fine sandy loam, 0 to 3 percent slopes

Beltrami

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 1
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	6.1 to 7.3
Bt1 -- 6 to 12 in	loam	moderately rapid	0.65 to 1.12 in	5.6 to 7.3
Bt2,Bt4 -- 12 to 48 in	clay loam	moderate	5.43 to 6.88 in	5.6 to 7.8
C -- 48 to 80 in	loam	moderate	4.78 to 6.06 in	7.4 to 8.4

152C--Milaca fine sandy loam, 6 to 12 percent slopes

Milaca

Extent: 95 percent of the unit
Landform(s): drumlins
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.51 to 0.71 in	5.1 to 6.5
E -- 4 to 12 in	fine sandy loam	moderately rapid	1.42 to 1.73 in	5.1 to 6.5
Bt -- 12 to 20 in	fine sandy loam	moderate	0.99 to 1.32 in	5.1 to 6.5
BC -- 20 to 42 in	sandy loam	slow	1.76 to 2.65 in	5.6 to 7.3
Cd -- 42 to 80 in	sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

152E--Milaca fine sandy loam, 12 to 25 percent slopes

Milaca

Extent: 95 percent of the unit
Landform(s): drumlins
Slope gradient: 12 to 25 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E -- 3 to 12 in	fine sandy loam	moderately rapid	1.56 to 1.91 in	5.1 to 6.5
Bt -- 12 to 20 in	fine sandy loam	moderate	0.99 to 1.32 in	5.1 to 6.5
BC -- 20 to 40 in	sandy loam	slow	1.61 to 2.41 in	5.6 to 7.3
Cd -- 40 to 80 in	sandy loam	very slow	1.99 to 3.18 in	5.6 to 7.3

158A--Zimmerman fine sand, 0 to 3 percent slopes

Zimmerman

Extent: 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.50 to 0.64 in	5.1 to 6.5
E,Bw,E&Bt -- 7 to 80 in	fine sand	rapid	4.37 to 7.28 in	5.1 to 7.3

158B--Zimmerman fine sand, 3 to 6 percent slopes

Zimmerman

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 3 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 6 in	fine sand	rapid	0.41 to 0.53 in	5.1 to 6.5
E,Bw,E&Bt --	6 to 80 in	fine sand	rapid	4.44 to 7.40 in	5.1 to 7.3

158C--Zimmerman fine sand, 6 to 12 percent slopes

Zimmerman

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 6 in	fine sand	rapid	0.41 to 0.53 in	5.1 to 6.5
E,Bw,E&Bt --	6 to 80 in	fine sand	rapid	4.44 to 7.40 in	5.1 to 7.3

158E--Zimmerman fine sand, 12 to 25 percent slopes

Zimmerman

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 12 to 25 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
A	--	0 to 3 in	fine sand	rapid	0.22 to 0.28 in	5.1 to 6.5
E,Bw,E&Bt	--	3 to 80 in	fine sand	rapid	4.61 to 7.68 in	5.1 to 7.3

161--Isanti fine sandy loam, depressional, 0 to 1 percent slopes

Isanti, depressional

Extent: 95 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A3	--	0 to 16 in	fine sandy loam	rapid	2.10 to 2.91 in	5.1 to 6.5
Bg	--	16 to 28 in	loamy fine sand	rapid	0.71 to 0.94 in	5.1 to 6.5
Cg	--	28 to 80 in	fine sand	rapid	2.60 to 3.64 in	5.6 to 6.5

162--Lino loamy fine sand, 0 to 2 percent slopes

Lino

Extent: 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.1 to 6.0
Bw -- 8 to 38 in	loamy fine sand	rapid	1.80 to 2.39 in	5.1 to 6.0
Cg -- 38 to 80 in	fine sand	rapid	2.11 to 2.95 in	5.1 to 6.5

164A--Mora loam, 0 to 3 percent slopes

Mora

Extent: 95 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 3 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	loam	moderate	1.00 to 1.18 in	5.1 to 6.5
E -- 6 to 15 in	sandy loam	moderately rapid	1.27 to 1.72 in	5.1 to 6.5
BE,Bt -- 15 to 36 in	sandy loam	moderate	3.13 to 3.96 in	5.6 to 6.5
BC -- 36 to 48 in	sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
Cd -- 48 to 80 in	sandy loam	very slow	1.59 to 2.55 in	5.6 to 7.3

165--Parent loam, 0 to 2 percent slopes

Parent

Extent: 90 percent of the unit
Landform(s): flats on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	5.6 to 7.3
Bg -- 15 to 33 in	loam	moderate	2.17 to 3.08 in	5.6 to 7.3
BC -- 33 to 40 in	sandy loam	moderately slow	0.57 to 0.85 in	6.1 to 7.3
Cd -- 40 to 80 in	sandy loam	very slow	1.99 to 3.18 in	6.1 to 7.3

166--Ronneby loam, 0 to 2 percent slopes

Ronneby

Extent: 90 percent of the unit
Landform(s): interdrumlins
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.71 to 0.91 in	5.1 to 6.5
E -- 4 to 12 in	fine sandy loam	moderately rapid	0.94 to 1.50 in	5.1 to 6.5
BE,Bt -- 12 to 45 in	fine sandy loam	moderate	3.97 to 6.28 in	5.6 to 6.5
BC -- 45 to 56 in	fine sandy loam	slow	0.88 to 1.32 in	5.6 to 7.3
Cd -- 56 to 80 in	fine sandy loam	very slow	1.20 to 1.92 in	5.6 to 7.3

169B--Braham loamy fine sand, 3 to 6 percent slopes

Braham

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 3 to 6 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	5.6 to 7.3
E -- 9 to 21 in	loamy fine sand	rapid	0.94 to 1.18 in	5.6 to 7.3
2Bt -- 21 to 46 in	clay loam	moderate	3.78 to 4.54 in	5.1 to 7.3
2Bk -- 46 to 80 in	loam	moderate	5.08 to 6.09 in	7.4 to 8.4

169C--Braham loamy fine sand, 6 to 12 percent slopes

Braham

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.6 to 7.3
E -- 8 to 28 in	loamy sand	rapid	1.61 to 2.01 in	5.6 to 7.3
2Bt -- 28 to 48 in	clay loam	moderate	3.01 to 3.61 in	5.1 to 7.3
2Bk -- 48 to 80 in	loam	moderate	4.78 to 5.74 in	7.4 to 8.4

169D--Braham loamy fine sand, 12 to 18 percent slopes

Braham

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 18 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.6 to 7.3
E -- 8 to 32 in	loamy sand	rapid	1.92 to 2.40 in	5.6 to 7.3
2Bt -- 32 to 55 in	clay loam	moderate	3.48 to 4.18 in	5.1 to 7.3
2Bk -- 55 to 80 in	loam	moderate	3.72 to 4.46 in	7.4 to 8.4

204B--Cushing fine sandy loam, 2 to 8 percent slopes

Cushing

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 8 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	fine sandy loam	moderate	0.59 to 1.30 in	5.1 to 7.8
E,B/E -- 6 to 22 in	fine sandy loam	moderate	1.61 to 3.55 in	5.1 to 7.8
Bt,BC -- 22 to 44 in	clay loam	moderate	2.20 to 4.19 in	5.1 to 7.8
C -- 44 to 80 in	loam	moderately slow	3.22 to 6.81 in	5.1 to 8.4

204C--Cushing fine sandy loam, 8 to 15 percent slopes

Cushing

Extent: 95 percent of the unit
Landform(s): hills on moraines
Slope gradient: 8 to 15 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sandy loam	moderate	0.71 to 1.56 in	5.1 to 7.8
E -- 7 to 21 in	fine sandy loam	moderate	1.38 to 3.03 in	5.1 to 7.8
Bt -- 21 to 44 in	clay loam	moderate	2.32 to 4.41 in	5.1 to 7.8
C -- 44 to 80 in	sandy loam	moderately slow	3.22 to 6.81 in	5.1 to 8.4

258B--Sandberg loamy coarse sand, 1 to 6 percent slopes

Sandberg

Extent: 95 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy coarse sand	rapid	1.42 to 1.70 in	5.6 to 7.8
Bw -- 14 to 32 in	gravelly coarse sand	rapid	0.53 to 1.77 in	6.1 to 7.8
C -- 32 to 80 in	sand	very rapid	0.96 to 2.88 in	7.4 to 8.4

258C--Sandberg loamy coarse sand, 6 to 12 percent slopes

Sandberg

Extent: 95 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
Bw -- 11 to 26 in	coarse sand	rapid	0.45 to 1.50 in	6.1 to 7.8
C -- 26 to 80 in	coarse sand	very rapid	1.08 to 3.24 in	7.4 to 8.4

258E--Sandberg loamy coarse sand, 12 to 35 percent slopes

Sandberg

Extent: 95 percent of the unit
Landform(s): escarpments on stream terraces, hills on stream terraces
Slope gradient: 12 to 35 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
Bw -- 11 to 27 in	coarse sand	rapid	0.48 to 1.61 in	6.1 to 7.8
C -- 27 to 80 in	gravelly coarse sand	very rapid	1.06 to 3.17 in	7.4 to 8.4

260--Duelm loamy sand, 0 to 2 percent slopes

Duelm

Extent: 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 16 in	loamy sand	rapid	1.29 to 1.94 in	5.6 to 7.3
Bw -- 16 to 30 in	coarse sand	rapid	0.83 to 1.52 in	5.1 to 7.3
C -- 30 to 80 in	coarse sand	rapid	1.00 to 3.50 in	5.6 to 7.8

261--Isan sandy loam, depressional, 0 to 1 percent slopes

Isan, depressional

Extent: 95 percent of the unit
Landform(s): depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 14 in	sandy loam	moderately rapid	1.42 to 2.13 in	5.6 to 7.3
AB,Bg -- 14 to 34 in	loamy sand	rapid	1.18 to 1.97 in	5.1 to 6.5
Cg -- 34 to 80 in	coarse sand	rapid	1.84 to 2.76 in	5.6 to 7.3

325--Prebish fine sandy loam, depressional, 0 to 1 percent slopes

Prebish, depressional

Extent: 95 percent of the unit
Landform(s): depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1,A2 -- 0 to 15 in	fine sandy loam	moderately rapid	2.39 to 2.69 in	5.6 to 7.3
Bg,BC -- 15 to 41 in	sandy loam	moderate	3.64 to 4.16 in	5.6 to 7.3
Cd -- 41 to 80 in	fine sandy loam	very slow	1.95 to 3.12 in	5.6 to 7.3

341--Arvilla sandy loam, 0 to 2 percent slopes

Arvilla

Extent: 95 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw -- 14 to 20 in	sandy loam	moderately rapid	0.65 to 0.83 in	6.1 to 7.3
2Bw,2Bk,2C -- 20 to 80 in	gravelly coarse sand	rapid	1.20 to 2.99 in	7.4 to 8.4

346--Talmoon loam, 0 to 2 percent slopes

Talmoon

Extent: 90 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.1 to 7.3
Eg -- 7 to 12 in	fine sandy loam	moderate	0.61 to 1.04 in	5.1 to 7.3
Btg -- 12 to 32 in	clay loam	moderately slow	3.21 to 3.81 in	5.6 to 7.3
Bk -- 32 to 80 in	loam	moderately slow	7.20 to 9.13 in	7.4 to 8.4

373--Renshaw loam, 0 to 3 percent slopes

Renshaw

Extent: 95 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.63 to 1.81 in	6.0 to 7.3
Bw -- 9 to 15 in	loam	moderately rapid	0.65 to 1.06 in	6.0 to 7.3
2Bw,2C -- 15 to 80 in	gravelly coarse sand	very rapid	1.95 to 3.90 in	6.6 to 8.4

454B--Mahtomedi loamy coarse sand, 1 to 6 percent slopes

Mahtomedi

Extent: 95 percent of the unit
Landform(s): hills on moraines
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy coarse sand	rapid	0.91 to 1.09 in	5.1 to 6.5
Bw -- 9 to 36 in	gravelly coarse sand	rapid	1.34 to 1.87 in	5.1 to 6.5
BC,C -- 36 to 80 in	coarse sand	rapid	1.76 to 3.97 in	5.1 to 7.3

454C--Mahtomedi loamy coarse sand, 6 to 15 percent slopes

Mahtomedi

Extent: 95 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 15 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 3 in	loamy coarse sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw -- 3 to 17 in	gravelly sand	rapid	0.69 to 0.96 in	5.1 to 6.5
C -- 17 to 80 in	sand	rapid	2.52 to 5.67 in	5.1 to 7.3

540--Seelyeville muck, 0 to 1 percent slopes

Seelyeville

Extent: 95 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa5 -- 10 to 80 in	muck	moderately rapid	24.53 to 31.54 in	

543--Markey muck, 0 to 1 percent slopes

Markey

Extent: 90 percent of the unit
Landform(s): depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: organic material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained
Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
2A -- 36 to 42 in	loamy sand	rapid	0.19 to 0.50 in	
2Cg -- 42 to 80 in	sand	rapid	1.13 to 3.02 in	

544--Cathro muck, 0 to 1 percent slopes

Cathro

Extent: 95 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1,Oa2 -- 0 to 30 in	muck	moderately rapid	13.46 to 16.46 in	
2A -- 30 to 38 in	loam	moderate	0.87 to 1.73 in	
2Cg -- 38 to 80 in	loam	moderate	4.63 to 9.27 in	

565--Eckvoll loamy fine sand, 0 to 3 percent slopes

Eckvoll

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 3 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
E -- 9 to 24 in	fine sand	rapid	0.90 to 1.20 in	6.1 to 7.3
2Bt -- 24 to 45 in	loam	moderate	3.34 to 3.76 in	6.1 to 7.3
2C -- 45 to 80 in	loam	moderate	5.96 to 6.66 in	7.4 to 8.4

567--Verndale sandy loam, 0 to 2 percent slopes

Verndale

Extent: 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.67 in	5.1 to 7.3
Bt -- 10 to 19 in	sandy loam	moderate	1.27 to 1.63 in	5.1 to 7.3
2Bw -- 19 to 28 in	sand	rapid	0.54 to 0.72 in	5.1 to 7.3
2C -- 28 to 80 in	sand	rapid	1.04 to 3.12 in	5.1 to 7.3

623A--Pierz sandy loam, 0 to 2 percent slopes

Pierz

Extent: 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A,AB -- 0 to 16 in	sandy loam	moderately rapid	2.10 to 2.74 in	5.1 to 6.5
Bt -- 16 to 29 in	sandy loam	moderately rapid	2.08 to 2.60 in	5.1 to 6.5
2C -- 29 to 80 in	gravelly sand	very rapid	1.02 to 2.03 in	5.1 to 6.5

623B--Pierz sandy loam, 2 to 6 percent slopes

Pierz

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.54 in	5.1 to 6.5
Bt -- 9 to 22 in	sandy loam	moderately rapid	2.08 to 2.60 in	5.1 to 6.5
2C -- 22 to 80 in	very gravelly coarse sand	very rapid	1.16 to 2.31 in	5.1 to 6.5

708--Rushlake coarse sand, 1 to 4 percent slopes

Rushlake

Extent: 85 percent of the unit
Landform(s): beaches
Slope gradient: 1 to 4 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 160
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	coarse sand	rapid	0.36 to 0.63 in	6.1 to 7.8
C -- 9 to 80 in	coarse sand	rapid	1.42 to 7.09 in	6.5 to 8.4

730A--Sanburn fine sandy loam, 0 to 2 percent slopes

Sanburn

Extent: 90 percent of the unit
Landform(s): outwash plains, moraines
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.71 to 0.89 in	5.1 to 6.5
Bt -- 6 to 18 in	sandy loam	moderately rapid	0.85 to 1.46 in	5.1 to 6.5
2Bt,2BC,2C -- 18 to 80 in	gravelly coarse sand	rapid	1.24 to 2.47 in	5.1 to 6.5

730B--Sanburn fine sandy loam, 2 to 6 percent slopes

Sanburn

Extent: 90 percent of the unit
Landform(s): hills on outwash plains, hills on moraines
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 19 in	sandy loam	moderately rapid	0.96 to 1.65 in	5.1 to 6.5
2BC,2C -- 19 to 80 in	gravelly coarse sand	rapid	1.22 to 2.44 in	5.1 to 6.5

732B--Bushville fine sand, 2 to 6 percent slopes

Bushville

Extent: 95 percent of the unit
Landform(s): drumlins
Slope gradient: 2 to 6 percent
Parent material: outwash over till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sand	rapid	0.55 to 0.79 in	5.1 to 6.5
E1,E2,E3 -- 8 to 28 in	fine sand	rapid	1.20 to 1.81 in	5.1 to 6.5
2Bt -- 28 to 33 in	fine sandy loam	moderate	0.61 to 0.82 in	5.1 to 6.5
2BC -- 33 to 43 in	fine sandy loam	slow	0.79 to 1.18 in	5.1 to 7.3
2Cd -- 43 to 80 in	sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

768--Mosford sandy loam, 0 to 2 percent slopes

Mosford

Extent: 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 2.13 in	5.1 to 7.3
Bw -- 12 to 16 in	coarse sandy loam	moderately rapid	0.52 to 0.74 in	5.1 to 7.3
2Bw -- 16 to 21 in	coarse sand	rapid	0.14 to 0.52 in	5.1 to 7.3
2C -- 21 to 80 in	sand	rapid	1.18 to 4.13 in	5.1 to 7.8

771--Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded

Elkriver, rarely flooded

Extent: 95 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A3 -- 10 to 35 in	fine sandy loam	moderately rapid	3.78 to 5.04 in	5.1 to 7.3
Bw -- 35 to 39 in	fine sandy loam	moderately rapid	0.59 to 0.75 in	5.6 to 7.8
2C -- 39 to 80 in	sand	rapid	0.82 to 4.09 in	5.6 to 7.8

799--Seelyeville and Bowstring soils, 0 to 1 percent slopes, frequently flooded

Seelyeville, frequently flooded

Extent: 45 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	
Oa2,Oa3 -- 12 to 80 in	muck	moderately rapid	23.84 to 30.65 in	

Bowstring, frequently flooded

Extent: 45 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: organic material and alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1,Oa2 -- 0 to 38 in	muck	moderately rapid	13.23 to 17.01 in	
Cg -- 38 to 47 in	stratified fine sand to fine sandy loam	rapid	0.72 to 1.27 in	
O'a1 -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

1013--Pits, quarry

Pits, quarry

Extent: 100 percent of the unit
Landform(s): stream terraces
Slope gradient:
Parent material: bedrock, granite
Restrictive feature(s): lithic bedrock at 0 to 4 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1015--Udipsamments, cut and fill land

Udipsamments, cut and fill land

Extent: 100 percent of the unit
Landform(s): outwash plains, stream terraces, lake plains
Slope gradient: 0 to 6 percent
Parent material: variable sandy material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group: A
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1016--Udorthents, loamy, cut and fill land

Udorthents, loamy, cut and fill land

Extent: 100 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 12 percent
Parent material: variable loamy material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group: B
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

1028--Udorthents-Pits, gravel, complex

Udorthents

Extent: 55 percent of the unit
Landform(s): moraines, outwash plains, stream terraces
Slope gradient: 0 to 25 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: excessively drained

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group: A
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Pits, gravel

Extent: 45 percent of the unit
Landform(s): moraines, outwash plains, stream terraces
Slope gradient: 0 to 50 percent
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1109--Isanti loamy fine sand, 0 to 2 percent slopes

Isanti

Extent: 90 percent of the unit
Landform(s): swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 16 in	loamy fine sand	rapid	1.61 to 1.94 in	5.1 to 6.5
Bg -- 16 to 23 in	loamy fine sand	rapid	0.40 to 0.54 in	5.1 to 6.5
BCg,Cg -- 23 to 80 in	fine sand	rapid	2.85 to 4.00 in	5.6 to 6.5

1110--Isan sandy loam, 0 to 2 percent slopes

Isan

Extent: 90 percent of the unit
Landform(s): swales on stream terraces, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	sandy loam	moderately rapid	1.81 to 2.72 in	5.6 to 7.3
AB,Bg -- 18 to 29 in	loamy sand	rapid	0.66 to 1.10 in	5.1 to 6.5
Cg -- 29 to 80 in	coarse sand	rapid	2.03 to 3.05 in	5.6 to 7.3

1223--Sandberg-Arvilla complex, 0 to 3 percent slopes

Sandberg

Extent: 60 percent of the unit
Landform(s): stream terraces
Slope gradient: 1 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
Bw,BC -- 11 to 35 in	gravelly coarse sand	rapid	0.72 to 2.40 in	6.1 to 7.8
C -- 35 to 80 in	gravelly coarse sand	very rapid	0.90 to 2.69 in	7.4 to 8.4

Arvilla

Extent: 30 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	coarse sandy loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw -- 14 to 17 in	coarse sandy loam	moderately rapid	0.30 to 0.39 in	6.1 to 7.3
2Bw,2C -- 17 to 80 in	gravelly coarse sand	rapid	1.26 to 3.15 in	7.4 to 8.4

1224--Hubbard-Verndale complex, 0 to 3 percent slopes

Hubbard

Extent: 60 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loamy coarse sand	rapid	0.88 to 1.32 in	5.1 to 7.3
Bw -- 11 to 27 in	loamy sand	rapid	0.48 to 1.13 in	5.1 to 7.3
BC,C -- 27 to 80 in	coarse sand	rapid	1.58 to 3.69 in	5.6 to 7.8

Verndale

Extent: 35 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	coarse sandy loam	moderately rapid	1.28 to 1.67 in	5.1 to 7.3
Bt -- 10 to 16 in	coarse sandy loam	moderate	0.88 to 1.13 in	5.1 to 7.3
2Bw -- 16 to 45 in	coarse sand	rapid	1.72 to 2.30 in	5.1 to 7.3
2C -- 45 to 80 in	sand	rapid	0.70 to 2.10 in	5.1 to 7.3

1231--Hubbard-Mosford complex, 0 to 3 percent slopes

Hubbard

Extent: 60 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loamy sand	rapid	1.04 to 1.56 in	5.1 to 7.3
Bw -- 13 to 19 in	loamy sand	rapid	0.18 to 0.41 in	5.1 to 7.3
BC,C -- 19 to 80 in	sand	rapid	1.83 to 4.27 in	5.6 to 7.8

Mosford

Extent: 35 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.1 to 7.3
Bw -- 13 to 16 in	coarse sandy loam	moderately rapid	0.38 to 0.54 in	5.1 to 7.3
2Bw -- 16 to 35 in	coarse sand	rapid	0.57 to 2.08 in	5.1 to 7.3
2C -- 35 to 80 in	sand	rapid	0.90 to 3.14 in	5.1 to 7.8

1253B--Stonelake-Sanburn complex, 1 to 6 percent slopes

Stonelake

Extent: 60 percent of the unit
Landform(s): hills on moraines
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	gravelly loamy sand	rapid	0.24 to 0.59 in	5.1 to 6.5
Bw -- 4 to 11 in	gravelly coarse sand	very rapid	0.21 to 0.28 in	5.1 to 6.5
Bt -- 11 to 24 in	very gravelly coarse sand	very rapid	0.39 to 1.04 in	5.1 to 6.5
BC,C -- 24 to 80 in	gravelly sand	very rapid	1.12 to 2.80 in	5.1 to 7.8

Sanburn

Extent: 30 percent of the unit
Landform(s): hills on moraines
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 20 in	gravelly sandy loam	moderately rapid	1.05 to 1.80 in	5.1 to 6.5
2BC,2C -- 20 to 80 in	gravelly coarse sand	rapid	1.20 to 2.39 in	5.1 to 6.5

1253C--Stonelake-Sanburn complex, 6 to 15 percent slopes

Stonelake

Extent: 65 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 15 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	gravelly loamy sand	rapid	0.20 to 0.35 in	5.1 to 6.5
Bw -- 4 to 11 in	gravelly coarse sand	very rapid	0.07 to 0.64 in	5.1 to 6.5
Bt -- 11 to 24 in	very gravelly coarse sand	very rapid	0.13 to 0.91 in	5.1 to 6.5
BC, C -- 24 to 80 in	gravelly sand	very rapid	0.56 to 3.35 in	5.1 to 7.3

Sanburn

Extent: 25 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 15 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 20 in	gravelly sandy loam	moderately rapid	1.05 to 1.80 in	5.1 to 6.5
2BC,2C -- 20 to 80 in	gravelly coarse sand	very rapid	1.20 to 2.39 in	5.1 to 6.5

1253E--Stonelake-Sanburn complex, 15 to 40 percent slopes

Stonelake

Extent: 65 percent of the unit
Landform(s): hills on moraines
Slope gradient: 15 to 40 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy coarse sand	rapid	0.12 to 0.30 in	5.1 to 6.5
E -- 2 to 8 in	very gravelly loamy coarse sand	very rapid	0.18 to 0.24 in	5.1 to 6.5
Bt -- 8 to 16 in	very gravelly coarse sand	very rapid	0.25 to 0.66 in	5.1 to 6.5
C -- 16 to 80 in	gravelly coarse sand	very rapid	1.28 to 3.19 in	5.1 to 7.8

Sanburn

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 15 to 30 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 14 in	sandy loam	moderately rapid	0.63 to 1.09 in	5.1 to 6.5
2C -- 14 to 80 in	coarse sand	rapid	1.31 to 2.63 in	5.1 to 6.5

1254--Ricelake fine sandy loam, 0 to 3 percent slopes

Ricelake

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: glacial outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	fine sandy loam	moderately rapid	1.45 to 1.63 in	6.1 to 7.3
E -- 9 to 27 in	loamy fine sand	rapid	1.06 to 1.95 in	6.1 to 7.3
Bt -- 27 to 48 in	fine sandy loam	moderately rapid	2.76 to 3.61 in	6.1 to 7.3
2Cg -- 48 to 80 in	clay loam	moderate	4.46 to 6.06 in	6.1 to 7.8

1255--Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Elkriver, occasionally flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A3 -- 10 to 26 in	fine sandy loam	moderately rapid	2.42 to 3.23 in	5.1 to 7.3
Bw -- 26 to 32 in	very fine sandy loam	moderately rapid	0.89 to 1.12 in	5.6 to 7.8
2C -- 32 to 80 in	sand	rapid	0.96 to 4.80 in	5.6 to 7.8

1256--Cantlin loamy fine sand, 0 to 3 percent slopes

Cantlin

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.1 to 6.0
Bw -- 8 to 22 in	loamy fine sand	rapid	0.85 to 1.13 in	5.1 to 6.0
BC,C -- 22 to 80 in	fine sand	rapid	2.89 to 4.05 in	5.1 to 6.5

1257--Elkriver-Mosford complex, 0 to 6 percent slopes, rarely flooded

Elkriver, rarely flooded

Extent: 55 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 3 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	fine sandy loam	moderately rapid	1.76 to 2.20 in	5.1 to 7.3
AB -- 11 to 20 in	fine sandy loam	moderately rapid	1.36 to 1.81 in	5.1 to 7.3
Bw -- 20 to 34 in	fine sandy loam	moderately rapid	2.07 to 2.62 in	5.6 to 7.8
2C -- 34 to 80 in	fine sand	rapid	0.92 to 4.61 in	5.6 to 7.8

Mosford, rarely flooded

Extent: 35 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	fine sandy loam	moderately rapid	1.43 to 1.98 in	5.1 to 7.3
Bw -- 11 to 16 in	fine sandy loam	moderately rapid	0.61 to 0.87 in	5.1 to 7.3
2Bw -- 16 to 25 in	fine sand	rapid	0.27 to 1.00 in	5.1 to 7.3
2C -- 25 to 80 in	sand	rapid	1.09 to 3.83 in	5.1 to 7.8

1258B--Zimmerman fine sand, thick solum, 1 to 6 percent slopes

Zimmerman, thick solum

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 1 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sand	rapid	0.14 to 0.18 in	5.1 to 6.5
Bw,E -- 2 to 62 in	fine sand	rapid	3.59 to 5.98 in	5.1 to 6.5
E'&Bt -- 62 to 80 in	fine sand	rapid	1.09 to 1.81 in	5.1 to 7.3

1258C--Zimmerman fine sand, thick solum, 6 to 12 percent slopes

Zimmerman, thick solum

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sand	rapid	0.22 to 0.28 in	5.1 to 6.5
Bw,E -- 3 to 70 in	fine sand	rapid	4.02 to 6.69 in	5.1 to 6.5
E'&Bt -- 70 to 80 in	fine sand	rapid	0.59 to 0.98 in	5.1 to 7.3

1258E--Zimmerman fine sand, thick solum, 12 to 35 percent slopes

Zimmerman, thick solum

Extent: 95 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 12 to 35 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sand	rapid	0.14 to 0.18 in	5.1 to 6.5
Bw,E -- 2 to 62 in	fine sand	rapid	3.59 to 5.98 in	5.1 to 6.5
E'&Bt -- 62 to 80 in	fine sand	rapid	1.09 to 1.81 in	5.1 to 7.3

1260B--Stonelake-Nebish complex, 2 to 6 percent slopes

Stonelake

Extent: 55 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy coarse sand	very rapid	0.79 to 0.94 in	5.1 to 6.5
Bt -- 8 to 30 in	very gravelly loamy coarse sand	very rapid	0.66 to 1.76 in	5.1 to 6.5
BC,C -- 30 to 80 in	gravelly sand	very rapid	1.00 to 2.50 in	5.1 to 7.4

Nebish

Extent: 30 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.6 to 7.3
E -- 6 to 9 in	fine sandy loam	moderately rapid	0.35 to 0.60 in	5.6 to 7.3
Bt -- 9 to 43 in	clay loam	moderate	5.08 to 6.43 in	5.6 to 7.8
Bk -- 43 to 80 in	loam	moderate	4.07 to 7.03 in	7.4 to 7.8

1260C--Stonelake-Nebish complex, 6 to 12 percent slopes

Stonelake

Extent: 55 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy sand	very rapid	0.71 to 0.85 in	5.1 to 6.5
E -- 7 to 20 in	loamy coarse sand	very rapid	0.39 to 0.52 in	5.1 to 6.5
Bt -- 20 to 42 in	very gravelly coarse sand	very rapid	0.66 to 1.76 in	5.1 to 6.5
C -- 42 to 80 in	very gravelly coarse sand	very rapid	0.76 to 1.89 in	5.1 to 7.8

Nebish

Extent: 30 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
E -- 3 to 10 in	fine sandy loam	moderately rapid	0.74 to 1.27 in	5.6 to 7.3
Bt -- 10 to 29 in	clay loam	moderate	2.89 to 3.67 in	5.6 to 7.8
Bk -- 29 to 80 in	loam	moderate	5.59 to 9.65 in	7.4 to 7.8

1260E--Stonelake-Nebish complex, 12 to 25 percent slopes

Stonelake

Extent: 60 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 25 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	gravelly coarse sandy loam	rapid	0.31 to 0.77 in	5.1 to 6.5
Bw -- 5 to 11 in	very gravelly coarse sand	very rapid	0.18 to 0.24 in	5.1 to 6.5
Bt -- 11 to 20 in	very gravelly coarse sand	very rapid	0.27 to 0.72 in	5.1 to 6.5
BC,C -- 20 to 80 in	very gravelly coarse sand	very rapid	1.20 to 2.99 in	5.1 to 7.8

Nebish

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 25 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
EB -- 5 to 9 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 9 to 27 in	clay loam	moderate	2.72 to 3.44 in	5.6 to 7.8
Bk -- 27 to 80 in	loam	moderate	5.80 to 10.02 in	7.4 to 7.8

1270B--Milaca fine sandy loam, moderately wet, 3 to 6 percent slopes

Milaca, moderately wet

Extent: 90 percent of the unit
Landform(s): drumlins
Slope gradient: 3 to 6 percent
Parent material: till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	fine sandy loam	moderately rapid	0.77 to 1.06 in	5.1 to 6.5
E,BE -- 6 to 19 in	fine sandy loam	moderately rapid	2.34 to 2.86 in	5.1 to 6.5
Bt -- 19 to 28 in	fine sandy loam	moderate	1.09 to 1.45 in	5.1 to 6.5
BC -- 28 to 45 in	fine sandy loam	slow	0.00 to 1.35 in	5.6 to 7.3
Cd -- 45 to 80 in	sandy loam	impermeable	0.00 to 1.40 in	5.6 to 7.3

1288--Seelyeville-Markey complex, ponded, 0 to 1 percent slopes

Seelyeville, ponded

Extent: 60 percent of the unit
Landform(s): depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 15 in	muck	moderately rapid	5.24 to 6.73 in	
Oa2,Oa3 -- 15 to 80 in	muck	moderately rapid	22.74 to 29.23 in	

Markey, ponded

Extent: 30 percent of the unit
Landform(s): depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: organic material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 27 in	muck	moderately rapid	9.51 to 12.22 in	
A -- 27 to 32 in	loamy sand	rapid	0.14 to 0.38 in	
Cg -- 32 to 80 in	sand	rapid	1.44 to 3.84 in	

1356--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

1946--Fordum-Winterfield complex, 0 to 2 percent slopes, frequently flooded

Fordum, frequently flooded

Extent: 65 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .20
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderately rapid	0.78 to 1.28 in	5.1 to 7.3
Cg -- 7 to 28 in	sandy loam	moderately rapid	2.09 to 4.59 in	5.1 to 7.3
2Cg -- 28 to 80 in	sand	rapid	2.08 to 5.20 in	5.6 to 7.3

Winterfield, frequently flooded

Extent: 20 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .17
Land capability, nonirrigated: 4w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.6 to 7.3
C1,C2 -- 8 to 20 in	sand	rapid	0.73 to 1.34 in	5.6 to 7.3
C3,C5 -- 20 to 80 in	sand	rapid	2.39 to 5.98 in	5.6 to 7.3

W--Water

Water

Extent: 100 percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.